

WHAT IS CLAIMED IS:

1 1. A method of managing a network device, comprising:
2 providing a command-line interface application programming interface (CLI-API)
3 compatible with a command-line interface (CLI) of the network device;
4 receiving an instruction from an application configured to call one or more routines in
5 the CLI application programming interface; and
6 generating at least one command in response to receiving instructions from the
7 application wherein the at least one command is compatible with the CLI of the network
8 device.

1 2. The method of claim 1, wherein the CLI-API is implemented as one or more
2 object-oriented classes and the one or more routines are method calls in the one or more
3 object-oriented classes.

1 3. The method of claim 2, wherein the class and methods are compatible with the
2 Java object-oriented programming language.

1 4. The method of claim 2, wherein the one or more object-oriented classes are
2 selected from a set of classes including a session management class, an input-output class, a
3 configuration class, a macro-generation class, and other classes.

1 5. The method of claim 1, wherein the at least one command in the CLI of the
2 network device is capable of performing one or more network management operations
3 selected from a set of operations including configuring a network device, gathering
4 information on network interfaces on a network device, bringing a network device up or
5 down on a network, and downloading a new image to a network device.

1 6. A network system having network management capabilities, comprising:
2 a non-application enabled network device having a command line interface (CLI)
3 capable of controlling one or more network management features of the non-application
4 enabled network device; and
5 an application-enabled network device capable of executing applications that use a
6 command-line interface application programming interface (CLI-API) to generate one or

7 more commands compatible with the CLI of the non-application enabled network device and
8 transmit the one or more commands to the non-application enabled network device over the
9 network for execution.

1 7. The network system of claim 6, wherein the application-enabled network
2 device is capable of processing object-oriented applications compatible with the Java
3 programming language.

1 8. The network system of claim 6, wherein a remote serial command line
2 interface (RS-CLI) device connected between the network and the non-application enabled
3 network device receives an application over the network from the application-enabled
4 network device, executes the application and produces commands transmitted over a serial
5 connection connected to the non-application enabled network device wherein the commands
6 are compatible with the CLI on the non-application enabled network device.

1 9. The network of claim 8, wherein the RS-CLI device comprises,
2 a storage device capable of storing an instruction;
3 a network port capable of processing a network protocol stack and connected to the
4 network;
5 a serial port capable of processing a serial protocol and connected to the non-
6 application enabled network device; and
7 a processor capable of processing the instruction stored in the storage area of the RS-
8 CLI device that at least generates a command compatible with a CLI of a network device in
9 response to processing the instruction stored in the storage area.

1 10. The RS-CLI device of claim 8, wherein the instruction stored in the storage
2 area is from a software component selected from a set of software components including an
3 operating system, an object-oriented component, a virtual machine, and a network protocol
4 stack.

1 11. A remote serial command-line interface (RS-CLI) device comprising:
2 a storage device capable of storing an instruction;
3 a network port capable of being connected to the network and capable of processing a

09753017-122900

4 network protocol stack in addition to receiving the instruction;
 5 a serial port capable of processing a serial protocol and capable of being connected to
 6 the non-application enabled network device; and
 7 a processor capable of processing the instruction stored in the storage area of the RS-
 8 CLI device that at least generates a command compatible with a CLI of the non-application
 9 enabled network device in response to processing the instruction stored in the storage area.

1 12. The RS-CLI device of claim 11, wherein the instruction in the storage area is
 2 from a software component stored in the storage area and selected from a set of software
 3 components including an operating system, an object-oriented component, a virtual machine,
 4 a network protocol stack, and an object-oriented application.

1 13. A method of managing a network device, comprising:
 2 receiving an application having instructions compatible with a command-line
 3 interface application programming interface (CLI-API) configured to work with a command-
 4 line interface (CLI) of the network device;
 5 creating CLI commands capable of controlling the network device in response to
 6 processing one or more of the instructions compatible with the CLI-API;
 7 transmitting the CLI commands created by the CLI-API over a network to the
 8 network device; and
 9 processing the CLI commands on the network device.

1 14. The method of claim 13, wherein the step of processing the CLI commands on
 2 the network device manages one or more aspects of the operation of the network device.

1 15. The method of claim 13, further comprising,
 2 providing results from the processing of the CLI commands on the network
 3 device over the network and to the application.

1 16. The method of claim 13, wherein the application is executed on an
 2 application-enabled network device and the network device is a non-application enabled
 3 network device having a CLI.

1 17. The method of claim 13, wherein the application enabled network device is

2 capable of processing Java object-oriented instructions.

1 18. An apparatus for managing a non-application enabled network device,
2 comprising:

3 an application-enabled network device configured to receive an application having
4 instructions compatible with a command-line interface application programming interface
5 (CLI-API) that works with a command-line interface (CLI) of the non-application enabled
6 network device;

7 a processor associated with the application-enabled network device that executes the
8 application and creates CLI commands in response to processing one or more of the
9 instructions compatible with the CLI-API wherein the commands are capable of controlling
10 the non-application enabled network device; and

11 a network interface on the application-enabled network device that transmits the CLI
12 commands created by the CLI-API over a network for processing by the non-application
13 enabled network device.

1 19. The apparatus of claim 18, wherein the CLI commands created on the
2 application-enabled network device are capable of controlling one or more aspects of the
3 operation of the non-application enabled network device.

1 20. The apparatus of claim 17, wherein the application-enabled network device
2 receives results over the network from the processing of the CLI commands on the non-
3 application enabled network device.

1 21. The apparatus of claim 17, wherein the application-enabled network device
2 can process Java object-oriented instructions.

09753047-132900